III.   AMENDMENTS TO THE CLAIMS

- *PLEASE FIND BELOW A MARKED VERSION OF CLAIMS WITH PRESENT STATUS DELINEATED*

    - *THE CLAIMS ARE HEREIN AMENDED, CANCELED, OR ADDED TO, SO AS TO EVENTUATE IN THE NEW SET OF PENDING CLAIMS INDICATED BELOW. THIS LISTING OF CLAIMS WILL REPLACE ALL PRIOR VERSIONS AND LISTING OF CLAIMS IN THE APPLICATION.*

Claims are shown on next page.

1-47. (CANCELLED)

48.   (CURRENTLY AMENDED) A method for detecting a cell deposited on a microscope slide said cell ~~and~~ labeled with a detectable label, ~~performed~~ using a computerized microscope system having a <u>reagent dispenser,</u> stage for holding said microscope slide, a microscopic vision module for detecting a signal indicative of the presence of a labeled ~~rare~~ cell[[,]] or a blob comprising a labeled ~~rare~~ cell, on the microscope slide<u>, and further</u> having a <u>slide</u> ~~transporter thereof from a~~ storage module, <u>a</u> <u>transporter for moving one or more slides from said storage module to said stage,</u> ~~and for~~ ~~recording the position coordinates of said rare cell, or said blob comprising said labeled~~ ~~rare cell in an optical field~~, a processor configured <u>to record the position coordinates of</u> <u>said labeled cell, or said blob comprising said labeled cell in an optical field, and</u> based on data pertaining to the position coordinates of said ~~rare~~ <u>labeled</u> cell, or said blob comprising said labeled ~~rare~~ cell, to provide <u>movement</u> instructions to <u>said</u> ~~locate~~ a reagent dispenser <u>to move to</u> ~~at the~~ position coordinates of ~~a signal indicative of the presence of~~ said labeled ~~rare~~ cell, or said blob comprising a labeled ~~rare~~ cell, and to cause said reagent dispenser to dispense a volume of material, said method comprising the steps of:

(i) automatically locating in an optical field <u>on a microscope slide</u> a ~~rare~~ cell candidate, or a cell blob comprising a ~~rare~~ cell candidate, by determining correspondence of digitized optical properties in an optical field with predetermined data indicative of said labeled ~~rare~~ cell;

(ii) automatically recording coordinates of said ~~rare~~ cell candidate, or said blob

comprising said labeled ~~rare~~ cell, in the optical field;

(iii) automatically locating said reagent dispenser over said ~~rare~~ cell candidate, or cell blob comprising ~~a rare~~ said cell candidate, based on ~~one or more set of~~ said position coordinates; and

(iv) automatically dispensing reagent from said reagent dispenser onto said ~~rare~~ cell candidate, or said blob comprising said ~~rare~~ cell candidate[[, and]].

~~(v) transporting the sample to the storage module.~~

49.   (PREVIOUSLY PRESENTED) The method of claim 48 wherein said reagent dispensed at step (iv) is at least one material selected from the group consisting of: a label, PCR material, and a primer.

50.   (CURRENTLY AMENDED) The method of claim 48 wherein said reagent dispenser of said computerized microscope system is interfaced with a motor such that it can move with respect to said stage.

51.   (CURRENTLY AMENDED) The method of claim 48 wherein said stage of said computerized microscope system is motorized to move with respect to such reagent dispenser.

52.   (CURRENTLY AMENDED) The method of claim 48 further comprising after step (iv), a step (v) comprising moving said microscope slide to a thermocycling station.

53.   (CURRENTLY AMENDED) The method of claim 48 wherein the reagent dispenser of said computerized microscope system comprises a sensor for locating position with respect to said microscope slide or microscope stage.

54.   (CURRENTLY AMENDED) The method of claim 48 wherein the reagent dispenser of said computerized microscope system comprises a pump for delivering

reagents from a reagent reservoir.

55. **(CURRENTLY AMENDED)** The method of claim 48 wherein the microscope slide transporter of said computerized microscope comprises at least one sensor for locating position with respect to said microscope system ~~slide or microscope stage~~ or storage module.